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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,784	12/08/2003	Kia Silverbrook	MTB08US	1042
24011 7590 09/26/2007 SILVERBROOK RESEARCH PTY LTD 393 DARLING STREET BALMAIN, 2041 AUSTRALIA			EXAMINER NGUYEN, LAMSON D	
			ART UNIT 2861	PAPER NUMBER
			MAIL DATE 09/26/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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**Office Action Summary**

Application No.

10/728,784

Applicant(s)

SILVERBROOK, KIA

Examiner

Lamson D. Nguyen

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Restriction election dated 07/08/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 21-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 31-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/28/07, 12/12/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 11, 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In claims 1, 31, “using lithographically masked etching techniques...” and “...is formed by etching a hole through the wafer” have no patentable weight since they have not established any structural limitations in an apparatus claim.
- In claim 11, “using lithographically masked etching techniques...” and “...is formed by etching a hole through the wafer” have no patentable weight since they have not established any structural limitations in an apparatus claim. The same is applicable to the limitation “subsequently filling the hole with resist...”

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7-9, 11, 17-19, 31, 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamura et al. (6,310,639).

***Kawamura et al teach an inkjet printhead comprising:***

- (Claims 1, 11, 31) a plurality of nozzles (figure 3, nozzles 320), a plurality of liquid passages leading to each nozzle respectively for providing ejectable liquid to the associated the nozzle (figure 3, ink vias/channels 321 and 323 providing ink to nozzles 320); and, droplet ejection actuators and associated drive circuitry corresponding to each nozzle respectively (figure 3, resistor 309; figure 5, electrical ckts, column 9, lines 20-35), the nozzles, ejection actuators, associated drive circuitry and liquid passage being formed on and through a wafer (figure 3 teaches ink vias/channels/passages 321 and 323 formed and through substrate 303), wherein, the wafer has a drop ejection side and a liquid supply side (figure 3); such that, each of the liquid passages is formed by a hole in the wafer from the drop ejection side, and a supply passage through the wafer from the liquid supply side of the wafer to form a fluid connection with the hole (figure 3).
- (Claims 7, 17, 37) wherein the droplet ejection actuators are gas bubble generating heater elements (figure 3, resistors 309).
- (Claims 8, 18, 38) further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle (figure 3, ink chambers

317 and 329 for the 2 nozzles illustrated); wherein, at least one the of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively (figure 3, each nozzle has a resistor 309); such that, a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater elements causes a droplet of the ejectable liquid to be ejected from the nozzle (figure 3, well-known feature).

- (Claims 9, 19, 39) wherein the bubble forming liquid is the same as the ejected liquid (figure 3).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5, 12-15, 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al.

***Kawamura et al teach all claimed features of the instant application except:***

- (Claims 2, 12, 32) wherein the width of the hole is greater than 8 microns.
- (Claims 3, 13, 33) wherein the width of the hole is less than 24 microns.

- (Claims 4, 14, 34) wherein the width of the supply passage is greater than 14 microns.
- (Claims 5, 15, 35) wherein the width of the supply passage is less than 28 microns.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the width of the hole and the supply passage as above for the purpose of providing ink to the nozzle, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 10, 20, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al in view of Hermanson (5,581,284).

Kawamura et al teach all claimed features except Kawamura's printer not being a pagewidth printhead.

It is well-known in the art of inkjet printers that a printing system having a pagewidth can work as well with a serial-type carriage printhead, or vice versa, as taught by Hermanson (column 6, lines 47-50).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kawamura et al to incorporate the teaching of a pagewidth printhead for the purpose of increasing print

throughput as is well-known in the art.

Claims 6, 16, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura in view of Jeanmaire et al. (6,575,566).

Kawamura teaches all claimed features except:

- (claims 6, 16, and 36) the droplet ejection actuators are thermal bend actuators.

It is well-known in the art of inkjet printers to utilize thermal bend actuators as taught by Jeanmaire et al (figure 12).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kawamura to incorporate the teaching of thermal bend actuators as taught by Jeanmaire for the purpose of ejecting out ink drops.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamson D. Nguyen whose telephone number is 571-272-2259. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2861

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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LAMSON NGUYEN  
PRIMARY EXAMINER  
09/10/07